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REMARKS

Applicants respectfully request further examination and reconsideration in view of the above amendments and the comments set forth fully below. Claims 31-43 were pending. Within the Office Action, Claims 31-43 have been rejected. Claims 31-43 are now pending.

Objections To The Drawings

Within the Office Action, the drawings have been objected to under 37 CFR 1.83(a) for not showing every feature of the invention specified in the claims. Specifically, it is stated within the Office Action that the second waste tube and the drain seal coupled to the waste tube for creating a seal between the first waste tube and one of the first and second drain must be shown or the features canceled from the claims. The applicants respectfully disagree. The waste tube system is shown in Figures 4, 7 and 9. While a single waste tube system is shown in the figures, it is stated within the specification that “[p]referably, the synthesizer 100 includes two waste tube systems 430 for flushing two banks of vials simultaneously. Alternatively, any appropriate number of waste tube systems can be included within the synthesizer 100 for selectively flushing banks of vials.” [Specification, page 13, lines 17-19] With reference to this portion of the specification, the second waste tube system, as claimed within the claims, is the same as the first waste tube system. This portion of the specification refers to “two waste tube systems 430.” Accordingly, the waste tube system 430 which is shown in the figures, is representative of both the first waste tube and the second waste tube.

The drain seal is illustrated in Figure 9 by the element 940 (540 in the originally submitted drawing, 940 in the amended drawing). As stated within the specification, “[t]he mobile tube 920 includes a drain seal 940 positioned on top of the mobile tube 920.” [Specification, page 13, lines 5-6] For at least these reasons, the second waste tube and the drain seal are shown in the drawings. Therefore, it is respectfully requested that this objection to the drawings be withdrawn.

Within the Office Action, the drawings have been objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character 520 has been used to designate mobile tube, waste tube and holes. By the above amendment, Figure 9 and the accompanying text on page 13 of the specification, have been amended to change the reference character 520 in Figure 9 to the

reference character 920. Therefore, it is respectfully requested that this objection to the drawings be withdrawn.

Within the Office Action, the drawings have been objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character 530 has been used to designate both gas fitting and waste tube system. By the above amendment, Figure 9 and the accompanying text on page 13 of the specification, have been amended to change the reference character 530 in Figure 9 to the reference character 930. Therefore, it is respectfully requested that this objection to the drawings be withdrawn.

Rejections Under 35 U.S.C. § 112

Within the Office Action, Claims 31-43 have been rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. There are no specific occurrences cited within the Office Action to support this rejection. All that is stated within the Office Action, is that the connection, interrelationship and configuration of the structural elements and their function with respect to each other are not clearly described in the specification. Without specifically cited occurrences, the applicants cannot respond to such a rejection. Further, the applicants submit that the claims do comply with the written description requirement. Therefore, it is respectfully requested that the rejection of Claims 31-43 under 35 U.S.C. § 112, first paragraph, be withdrawn.

Rejections Under 35 U.S.C. § 103

Within the Office Action, Claims 31-43 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,472,672 to Brennan (hereinafter “Brennan”) in view of PCT Publication No. 98/10857 to Zuckermann et al. (hereinafter “Zuckermann et al.”). The applicants respectfully disagree.

Brennan teaches an apparatus and method for polymer synthesis using arrays. The apparatus taught by Brennan includes a head assembly having an array of nozzles with each nozzle coupled to a reservoir of liquid reagent. The apparatus taught by Brennan also includes a base assembly having an array of reaction wells arranged in linear rows and columns. Brennan teaches that the reagent solution is expelled from all of the reaction wells when the pressure differential between the reaction wells and an exit orifice exceeds a predetermined amount.

Brennan does not teach engaging a drain associated with a selective one of the first bank of vials and the second bank of vials within a purging system. Further, Brennan does not teach purging material from the selected one of the first bank of vials and the second bank of vials.

Zuckermann teaches an actuation means for use in solid phase chemical synthesis involving arrays of modular reaction vessels. The apparatus taught by Zuckermann includes a plurality of reaction vessels arranged in a substantially linear array. [Zuckermann, Abstract] The reaction vessels of Zuckermann include modular valving means capable of being simultaneously actuated to drain or close each of the reaction vessels in the array. [Zuckermann, Abstract] Zuckermann also does not teach engaging a drain associated with a selective one of the first bank of vials and the second bank of vials within a purging system. As described above, Brennan also does not teach engaging a drain associated with a selective one of the first bank of vials and the second bank of vials within a purging system. Accordingly, neither Brennan, Zuckermann nor their combination teach engaging a drain associated with a selective one of the first bank of vials and the second bank of vials within a purging system. Zuckermann also does not teach purging material from the selected one of the first bank of vials and the second bank of vials. As described above, Brennan also does not teach purging material from the selected one of the first bank of vials and the second bank of vials. Accordingly, neither Brennan, Zuckermann nor their combination teach purging material from the selected one of the first bank of vials and the second bank of vials.

In contrast to the teachings of Brennan and Zuckermann, the multi-well rotary synthesizer includes a controller, a plurality of precision fit vials circularly arranged in multiple banks on a cartridge, a drain corresponding to each bank of vials, a chamber bowl, a plurality of valves for delivering reagents to selective vials and a waste tube system for purging material from the vials. [Specification, p. 3, lines 8-11] The banks of vials can also be selectively purged, allowing the banks of vials to be used to synthesize different polymer chains. [Specification, p. 3, lines 8-11] The plurality of vials are held within the cartridge and divided among individual banks. [Specification, page 3, lines 15-16] Each individual bank of vials has a corresponding drain. [Specification, page 3, line 16] The reagent solution is purged from a bank of vials by rotating the cartridge until the corresponding drain is positioned above the waste tube system and coupling the waste tube system to the corresponding drain. As discussed above, neither Brennan, Zuckermann nor their combination teach engaging a drain associated with a selective one of the

first bank of vials and the second bank of vials within a purging system. As also discussed above, neither Brennan, Zuckermann nor their combination teach purging material from the selected one of the first bank of vials and the second bank of vials.

The independent Claim 31 is directed to a method of selectively and sequentially dispensing a plurality of reagent solutions to a plurality of vials divided into a first bank of vials and a second bank of vials and selectively purging material from the first bank of vials and the second bank of vials. The method of Claim 31 comprises the steps of dispensing one or more of the plurality of reagent solutions to a selective one or more of the plurality of vials, to perform synthesis within the selective one or more of the plurality of vials, engaging a drain associated with a selective one of the first bank of vials and the second bank of vials within a purging system and purging material from the selected one of the first bank of vials and the second bank of vials through the purging system. As discussed above, neither Brennan, Zuckermann nor their combination teach engaging a drain associated with a selective one of the first bank of vials and the second bank of vials within a purging system. As also discussed above, neither Brennan, Zuckermann nor their combination teach purging material from the selected one of the first bank of vials and the second bank of vials through the purging system. For at least these reasons, the independent Claim 31 is allowable over the teachings of Brennan, Zuckermann and their combination.

Claims 32, 33 and 35-38 are all dependent on the independent Claim 31. As described above, the independent Claim 31 is allowable over the teachings of Brennan, Zuckermann and their combination. Accordingly, the Claims 32, 33 and 35-38 are all also allowable as being dependent on an allowable base claim.

The independent Claim 34 is directed to a method of selectively purging material from a selective one of a first vial and a second vial in which synthesis is taking place. The method of Claim 34 comprises the steps of engaging a drain associated with the selected one of the first vial and the second vial with a waste tube, forming a pressure differential between an interior and an exterior of the selective one of the first vial and the second vial, thereby expelling material from the selective one of the first vial and the second vial through the waste tube and disengaging the waste tube from the drain after the material has been purged. As discussed above, neither Brennan, Zuckermann nor their combination teach engaging a drain associated with the selected one of the first vial and the second vial with a waste tube. For at least these reasons, the independent Claim 34 is allowable over the teachings of Brennan, Zuckermann and their combination.

The independent Claim 39 is directed to a method of selectively and sequentially dispensing a plurality of reagent solutions to a plurality of vials divided into a first bank of vials and a second bank of vials and selectively purging material from the first bank of vials and the second bank of vials. The method of Claim 39 comprises dispensing one or more of the plurality of reagent solutions to a selective one or more of the plurality of vials, to perform synthesis within the selective one or more of the plurality of vials and purging material from the selected one of the first bank of vials and the second bank of vials. As discussed above, neither Brennan, Zuckermann nor their combination teach purging material from the selected one of the first bank of vials and the second bank of vials. For at least these reasons, the independent Claim 39 is allowable over the teachings of Brennan, Zuckermann and their combination.

Claims 40 and 41 are both dependent on the independent Claim 39. As described above, the independent Claim 39 is allowable over the teachings of Brennan, Zuckermann and their combination. Accordingly, the Claims 40 and 41 are both also allowable as being dependent on an allowable base claim.

The independent Claim 42 is directed to a method of selectively purging material from a selective one of a first vial and a second vial in which synthesis is taking place. The method of Claim 42 comprises coupling a waste tube to a selective one of a first drain corresponding to the first vial and a second drain corresponding to the second vial and forming a pressure differential between an interior and an exterior of the selective one of the first vial and the second vial, thereby expelling material from the selective one of the first vial and the second vial through the waste tube. As discussed above, neither Brennan, Zuckermann nor their combination teach coupling a waste tube to a selective one of a first drain corresponding to the first vial and a second drain corresponding to the second vial. For at least these reasons, the independent Claim 42 is allowable over the teachings of Brennan, Zuckermann and their combination.

Claim 43 is dependent on the independent Claim 42. As described above, the independent Claim 42 is allowable over the teachings of Brennan, Zuckermann and their combination. Accordingly, the Claim 43 is also allowable as being dependent on an allowable base claim.

Within the Office Action, Claims 31-43 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Brennan in view of Zuckermann and further in view of U.S. Patent No. 5,424,038 to Benz et al. (hereinafter “Benz et al.”) The applicants respectfully disagree. Benz et al teach a specimen collector. The arrangement of Benz et al. has a plurality of receiving vessels each formed as a closed cell provided with a first conduit open below and a second conduit open

above into an interior of the cell. [Benz et al., Abstract] Benz et al. teach that the arrangement includes two pairs of connecting conduits and a mechanical switching device that has three positions for each group of the cells to close the first and second conduits, connect the first and second conduits with the first pair of connecting conduits and connect the first and second conduits with the second pair of connecting conduits. [Benz et al., Abstract] Benz et al. do not teach a purging system for use with a synthesizer. Benz et al. do not teach a system which includes a first and second bank of vials. Benz et al. do not teach a waste tube capable of engaging with a first drain and a second drain. The connecting conduits of Benz et al. are not waste tubes and do not engage a drain to purge material from a bank of vials. Benz et al. do not teach engaging a drain associated with a selective one of the first bank of vials and the second bank of vials within a purging system.

As discussed above, neither Brennan, Zuckermann nor their combination teach engaging a drain associated with a selective one of the first bank of vials and the second bank of vials within a purging system. As discussed above, Benz et al. also do not teach engaging a drain associated with a selective one of the first bank of vials and the second bank of vials within a purging system. Accordingly, neither Brennan, Zuckermann, Benz et al. nor their combination teach engaging a drain associated with a selective one of the first bank of vials and the second bank of vials within a purging system.

As also discussed above, neither Brennan, Zuckermann nor their combination teach purging material from the selected one of the first bank of vials and the second bank of vials. As discussed above, Benz et al. also do not teach purging material from the selected one of the first bank of vials and the second bank of vials. Accordingly, neither Brennan, Zuckermann, Benz et al. nor their combination teach purging material from the selected one of the first bank of vials and the second bank of vials.

In contrast to the teachings of Brennan, Zuckermann, Benz et al. and their combination, the multi-well rotary synthesizer includes a controller, a plurality of precision fit vials circularly arranged in multiple banks on a cartridge, a drain corresponding to each bank of vials, a chamber bowl, a plurality of valves for delivering reagents to selective vials and a waste tube system for purging material from the vials. [Specification, p. 3, lines 8-11] The banks of vials can also be selectively purged, allowing the banks of vials to be used to synthesize different polymer chains. [Specification, p. 3, lines 8-11] The plurality of vials are held within the cartridge and divided among individual banks. [Specification, page 3, lines 15-16] Each individual bank of vials has a corresponding drain. [Specification, page 3, line 16] The reagent solution is purged from a bank

of vials by rotating the cartridge until the corresponding drain is positioned above the waste tube system and coupling the waste tube system to the corresponding drain. As discussed above, neither Brennan, Zuckermann, Benz et al. nor their combination teach engaging a drain associated with a selective one of the first bank of vials and the second bank of vials within a purging system. As also discussed above, neither Brennan, Zuckermann, Benz et al nor their combination teach purging material from the selected one of the first bank of vials and the second bank of vials.

The independent Claim 31 is directed to a method of selectively and sequentially dispensing a plurality of reagent solutions to a plurality of vials divided into a first bank of vials and a second bank of vials and selectively purging material from the first bank of vials and the second bank of vials. The method of Claim 31 comprises the steps of dispensing one or more of the plurality of reagent solutions to a selective one or more of the plurality of vials, to perform synthesis within the selective one or more of the plurality of vials, engaging a drain associated with a selective one of the first bank of vials and the second bank of vials within a purging system and purging material from the selected one of the first bank of vials and the second bank of vials through the purging system. As discussed above, neither Brennan, Zuckermann, Benz et al. nor their combination teach engaging a drain associated with a selective one of the first bank of vials and the second bank of vials within a purging system. As also discussed above, neither Brennan, Zuckermann, Benz et al. nor their combination teach purging material from the selected one of the first bank of vials and the second bank of vials through the purging system. For at least these reasons, the independent Claim 31 is allowable over the teachings of Brennan, Zuckermann, Benz et al. and their combination.

Claims 32, 33 and 35-38 are all dependent on the independent Claim 31. As described above, the independent Claim 31 is allowable over the teachings of Brennan, Zuckermann, Benz et al. and their combination. Accordingly, the Claims 32, 33 and 35-38 are all also allowable as being dependent on an allowable base claim.

The independent Claim 34 is directed to a method of selectively purging material from a selective one of a first vial and a second vial in which synthesis is taking place. The method of Claim 34 comprises the steps of engaging a drain associated with the selected one of the first vial and the second vial with a waste tube, forming a pressure differential between an interior and an exterior of the selective one of the first vial and the second vial, thereby expelling material from the selective one of the first vial and the second vial through the waste tube and disengaging the waste tube from the drain after the material has been purged. As discussed above, neither

Brennan, Zuckermann, Benz et al. nor their combination teach engaging a drain associated with the selected one of the first vial and the second vial with a waste tube. For at least these reasons, the independent Claim 34 is allowable over the teachings of Brennan, Zuckermann, Benz et al. and their combination.

The independent Claim 39 is directed to a method of selectively and sequentially dispensing a plurality of reagent solutions to a plurality of vials divided into a first bank of vials and a second bank of vials and selectively purging material from the first bank of vials and the second bank of vials. The method of Claim 39 comprises dispensing one or more of the plurality of reagent solutions to a selective one or more of the plurality of vials, to perform synthesis within the selective one or more of the plurality of vials and purging material from the selected one of the first bank of vials and the second bank of vials. As discussed above, neither Brennan, Zuckermann, Benz et al. nor their combination teach purging material from the selected one of the first bank of vials and the second bank of vials. For at least these reasons, the independent Claim 39 is allowable over the teachings of Brennan, Zuckermann, Benz et al. and their combination.

Claims 40 and 41 are both dependent on the independent Claim 39. As described above, the independent Claim 39 is allowable over the teachings of Brennan, Zuckermann, Benz et al. and their combination. Accordingly, the Claims 40 and 41 are both also allowable as being dependent on an allowable base claim.

The independent Claim 42 is directed to a method of selectively purging material from a selective one of a first vial and a second vial in which synthesis is taking place. The method of Claim 42 comprises coupling a waste tube to a selective one of a first drain corresponding to the first vial and a second drain corresponding to the second vial and forming a pressure differential between an interior and an exterior of the selective one of the first vial and the second vial, thereby expelling material from the selective one of the first vial and the second vial through the waste tube. As discussed above, neither Brennan, Zuckermann, Benz et al. nor their combination teach coupling a waste tube to a selective one of a first drain corresponding to the first vial and a second drain corresponding to the second vial. For at least these reasons, the independent Claim 42 is allowable over the teachings of Brennan, Zuckermann, Benz et al. and their combination.

Claim 43 is dependent on the independent Claim 42. As described above, the independent Claim 42 is allowable over the teachings of Brennan, Zuckermann, Benz et al. and their combination. Accordingly, the Claim 43 is also allowable as being dependent on an allowable base claim.

PATENT
Attorney Docket No.: NEI-00105

Applicants respectfully submit that the claims, as amended, are now in a condition for allowance, and allowance at an early date would be appreciated. Should the Examiner have any questions or comments, they are encouraged to call the undersigned at (408) 530-9700 to discuss the same so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,
HAVERSTOCK & OWENS LLP

Dated: April 16, 2004

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